REMARKS

Summary

This Amendment is responsive to the Office Action mailed on March 11, 2004. Claims 1-4, 6-13, 15-28, 30-38 and 40-56 are pending. Claims 4 and 13 have been withdrawn. Claims 1, 8, 10 and 17 have been amended. Claims 7, 16, 19-28, 30-38, and 40-56 have been cancelled.

Claims 1-3, 6, 8-12, 15 and 17-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bodkin et al. (WO 01/11865) in view of Muguet (US 4,787,063).

Claims 7 and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bodkin et al. and Muguet in view of Knudson et al. (US 6,141,488).

Applicants respectfully traverse these rejections in view of the following comments.

Discussion of Prior Art

The Examiner has rejected independent claims 1 and 10, and the respective dependent claims 2-3, 6, 8-9, 11-12, 15, and 17-18 as being unpatentable over Bodkin et al. in view of Muguet.

Independent claims 1 and 10 as amended each specify that an end of program notifier is provided in the television signal which identifies the end of the program. Recording of the program is terminated at the first to occur of (i) lapsing of a predetermined amount of time, and (ii) receipt of the end of program notifier. The combination of the Bodkin et al. reference with the Muguet

reference fails to teach or suggest all of Applicants' claimed elements.

Further, the combination of the Muguet reference with the Bodkin et al. reference does not remedy the defects of the Bodkin et al. reference taken alone. The Muguet reference teaches an (E) code related to an end of program which upon receipt triggers the video-recorder to stop recording. (Muguet column 12, lines 25-29). The Muguet reference fails to teach the claimed elements of terminating recording of the program at the first to occur of (i) lapsing of the predetermined amount of time, and (ii) receipt of the end of program notifier. The Muguet reference does not teach a technique to handle the possible loss of the (E) code. A passing reference is made in the Muguet reference concerning repetitively broadcasting the (E) code several times, such as ten times, in order to ensure a good reception. This technique is merely a token attempt at ensuring receipt of the code. The technique is not foolproof and such repetitive attempts are often regarded in the art as foolhardy. They are not acceptable solutions recognized by reliable communication system theory.

Applicants' claimed invention allows the PVR the flexibility of not waiting for the end of program notifier absolutely, but limiting the recording length based on a predetermined amount of time after a scheduled stop time. In other words, a fail-safe algorithm is provided in case the notifier is not received, thus preventing the scenario where the program (and whatever would follow it) is recorded endlessly until the storage medium is completely consumed.

In view of the above, Applicant respectfully submits that the claimed invention would not have been obvious to one skilled in the art in view of the combination of the Bodkin et al. reference and the Muguet reference, or any of the other prior art references of record, taken alone or in combination. Moreover, since independent claims 1, and 10 are not obvious, these claims, as well as each of claims 2-4, 6,11-12 and 15 dependent thereon are believed to be allowable. If an independent claim is non-obvious under 35 U.S.C. 103, then any claim depending therefrom is non-obvious. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

Further, independent claims 8 and 17 specify in part, the provision of additional information to the PVR indicating that the program supports the end of program notifiers, thereby configuring the PVR to terminate the recording based on the notifier. Dependent claims 9 and 18 specify that the additional information is provided in one of EPG data, ATVEF trigger information, a vertical blanking interval of an analog television signal, or a program identifier of a digital television signal.

The Examiner indicates that claims 8-9 and 17-18 are unpatentable over the combination of the Bodkin et al. reference and the Muguet reference. The combination of the Bodkin et al. reference and the Muguet reference does not disclose additional information indicating that the program supports an end of program notifier, and configuring the PVR to terminate the recording based on the notifier as claimed by Applicants. Further, the combination of the Bodkin et al. reference and the Muguet reference makes no mention whatsoever of ATVEF trigger information.

The Examiner cites to page 12 of the Bodkin et al. reference as disclosing this subject matter. However, page 12 of the Bodkin et al. reference makes no mention of configuring the Hard Drive Recorder (HDR) in response to additional information. In fact, no additional information is provided in the Bodkin et al. reference to notify the HDR that the program being recorded supports an (E) code signal as in taught the Muguet reference. The Muguet reference device is configured to continue recording indefinitely if no (E) code is received.

The combination of the Bodkin et al. reference and the Muguet reference does not disclose, or remotely suggest, that additional information indicating that the program supports an end of program notifier is provided in one of ATVEF trigger information, a vertical blanking interval of an analog television signal, or a program identifier of a digital television signal, as set forth in Applicants' claims 8-9 and 17-18.

In view of the above, Applicant respectfully submits that the claimed invention would not have been obvious to one skilled in the art in view of the combination of the Bodkin et al. reference and the Muguet reference, or any of the other prior art references of record, taken alone or in combination. Moreover, since independent claims 8, and 17 are not obvious, these claims as well as each of claims 9 and 18, dependent thereon are believed to be allowable.

Claims 7 and 16 are rejected based on the combination of Bodkin et al., Muguet et al. and Knudson et al. Claims 7 and 16 have been canceled, thus the rejection is now moot. However, the elements of claim 7 have been added to claim 1 and the elements of claim 16 have been added to

claim 10. The additional elements specify that each
program has an end time and that the PVR waits a
predetermined amount of time after the end time to receive
the end of program notifier. Recording is terminated at
the first to occur of either lapsing of the predetermined
amount of time or receipt of the end of program notifier.
Therefore, with Applicants' invention, it is ensured that
the entire program is recorded.

The combination of the Bodkin et al. reference, the
Muguet reference and the Knudson et al. reference does not
address the issue of ensuring that the entire program is
recorded. As discussed above, the Bodkin et al. reference
and the Muguet reference fail to teach or suggest
Applicants' claimed invention and the Knudson et al.
reference fails to remedy the defects of the other cited
references.

The Knudson et al. reference discloses that previously
known program guide systems have recorded short buffer
segments just before and after the scheduled broadcast time
of each selected program, which helps to ensure that the
program is recorded in its entirety even if there is a
slight discrepancy between the set-top box clock and the
broadcast time of the program (Knudson et al., col. 1,
lines 65).

In Applicants' claims 1 and 10, the predetermined
amount of time after the scheduled end time of the program
is provided so that in the event the end of program
notifier is not received, the entire program can still be
recorded, without wasting valuable storage space. With the
Knudson et al. reference, the user has no idea how much of
a buffer to provide to the stop time

Additionally, Applicants' claimed invention for handling a "lost" end of program notifier is a fail-safe timeout mechanism (i.e., a break out of the control flow of waiting for the end of time notifier). The Knudson et al. reference pre-defined extra record buffer segment is intended to be utilized always, with the only exception being a recording event setup immediately prior to or following the program. In the Knudson et al. reference, the duration of the recording, specifically when the program will terminate recording, is known before the recording is initiated. All of the information is known (e.g., the length of the buffer segment and whether or not another recording event is scheduled immediately after the program). The Knudson et al. reference device includes pre-record and post-record buffer segments that are expected to record valid program content, which happens to occur before/after the scheduled program time.

The combination of the Bodkin et al. reference and the Muguet reference does not teach or suggest the timeout (i.e., recording termination) when waiting for the (E) code either.

In Applicants' claimed system, the activation of the claimed timeout feature is not normally expected. Applicants' end of program notifier and continuance of recording the program until receipt of the notifier is the typical scenario. However, the process of waiting for the end of program notifier runs in parallel with a second process of waiting for the timeout. Such a technique, where two process for ending the recording run concurrently, is novel and unobvious.

Applicants' claimed combination of providing an end time as well as an end of program notifier, and waiting for receipt of the end of program notifier for a predetermined amount of time after the end time before stopping recording if no end of program notifier is received is neither disclosed nor suggested by the combination of The Bodkin et al. reference, Muguet reference and Knudson et al. reference. Therefore, claims 1 and 10 are clearly patentably distinguishable over the prior art cited by the Examiner.

Further remarks regarding the asserted relationship between Applicants' claims and the prior art are not deemed necessary, in view of the amended claims and the foregoing discussion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Withdrawal of the rejections under 35 U.S.C. § 103(a) is therefore respectfully requested. The Examiner is also regarded to allow withdrawn claims 4 and 13, as these relate to species that depend from generic claims 1 and 10, respectively. Upon allowance of a generic claim, Applicant is entitled to consideration of such previously withdrawn species claims.

Conclusion

The Examiner is respectfully requested to reconsider this application, allow each of the pending claims and to pass this application on to an early issue. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicants' undersigned attorney.

Respectfully submitted,

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